

Name: _____

Date: _____

Scale Drawing

Blowing up a Candy Bar / Comic Strip

Standards:

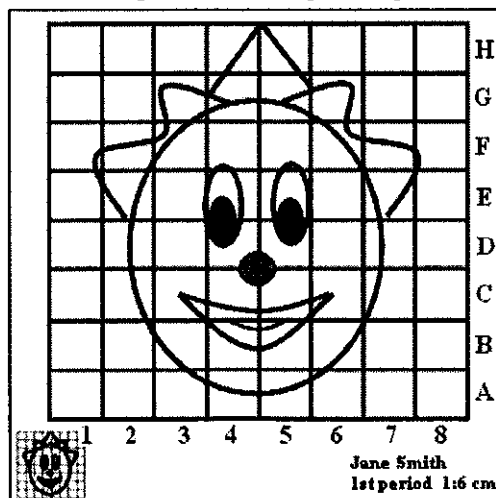
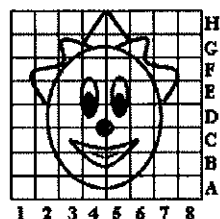
- ✧ Standards for Mathematical Practice
 - 2. Reason abstractly and quantitatively
 - 4. Model with mathematics.
 - 5. Use appropriate tools strategically.

- ✧ Common Core Mathematical Content Standards
 - 7.G.A.1 - Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.

Information: We have learned about Scale Drawings, such as maps, scientific DNA, and blueprints. We have also learned that these Scale Drawings are based on a Scale Factor. If the scale factor is less than one, the size of an object or a number is being decreased (reduced). If the scale factor is greater than one, the size of an object or a number is being increased (enlarged/dilated).

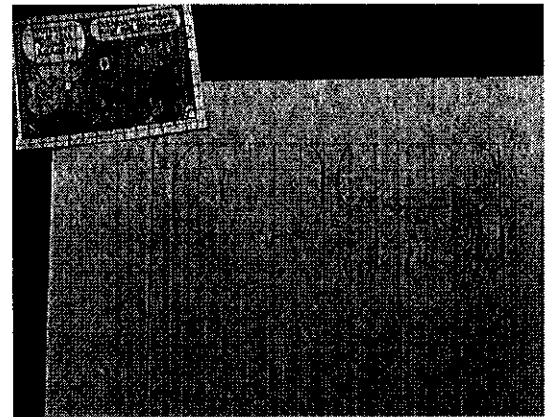
Overview of Project: You are going to enlarge (dilate) a candy bar or comic strip so that you can find the scale factor between a regular candy bar/comic strip and an enlarged candy bar/comic strip.

Sample enlargement scaling of image



Steps:

1. Take your empty candy bar wrapper OR choose ONE frame of the comic strip to cut out and to enlarge for your scale drawing.
2. Construct a grid by measuring quarter inch ($\frac{1}{4}$) squares along the width and length of the candy bar/original comic strip. Use a RULER! For help, you can tape your candy bar/comic strip to $\frac{1}{4}$ inch grid paper and continue the lines. (Keep this!)
3. Determine your SCALE FACTOR for the enlargement (page 3). Visit Team Straus and watch the 'Math Snacks: Scale Ella' video to remind yourself about scale drawings and scale factor if you need to.
4. Draw grid lines (in pencil) on 8.5 x 11 inch paper if that works with your scale factor OR use rolled white chart paper if your scale factor is too big for regular paper. Use a RULER!
5. Copy each box of the candy bar/comic strip onto your enlargement paper.
6. Outline everything in black marker and erase any stray pencil marks and the gridlines.
7. Color the candy bar/comic strip the same as the original.
8. Complete the MEASUREMENTS and REFLECTIONS page on page 3–5 to show your learning.
9. Determine your SCALE for your scale drawing. Write the SCALE and SCALE FACTOR on the graph paper in the bottom corner.



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Scale Drawing of Candy Bar/Comic Strip MEASUREMENTS:

Scale Used: _____ (e.g. 1 inch = 3 feet)

Candy Bar/Comic Strip Information	Original Size	Enlarged Size	Work (show proportions)
Length			
Width			

What is the SCALE FACTOR that you used? {show all calculations}

Scale Factor: _____

EXTENSION (BONUS FOR CANDY BAR SELECTION):

1. Copy the nutritional information from your original candy bar to the table below in the "Original Size" column.
2. Calculate the nutritional values of your enlarged candy bar in direct proportion to the original candy bar and record below.

Candy Bar Information	Original Size	Scale Factor	Enlarged Size
Calories			
Total Fat			
Cholesterol			
Sodium			
Total Carbohydrates			
Protein			

Name: _____

Date: _____

Write About Your Strategies: Using complete sentences, describe the math you used to solve this project:

Evaluation:

	1	2	3	4
Using Proportions	Fails to use proportions to show change of scale	Set up proportions that are incorrect for scale drawing	Correctly set up proportions for scale drawing with 1-2 minor errors.	Correctly set up proportions for scale drawing
Using Cross Products or Equal Ratios	Fails to use cross products or equal ratios to solve proportions. More than 5 errors and/ or missing work.	Use cross products or equal ratios to solve proportions. Contains 3-5 errors	Reasonably use cross products or equal ratios to solve proportions? Only 1-2 minor errors	Demonstrate the ability to use cross products or equal ratios efficiently and accurately to solve proportions. No errors in calculations.
Scale Drawing	Scale is not included or unrealistic. Calculations include many errors. No effort to round to nearest tenth.	Includes a scale for drawing or model. Includes all calculations and an attempt to round. Several errors in calculations and rounding.	Chose an acceptable scale for drawing or model. Includes accurate calculations and rounding with a couple of minor errors.	Chose an appropriate scale for drawing or model. Includes accurate and complete calculations. Correctly rounded measurements to nearest tenth.
Conceptual Understanding (REELECTION)	Describes strategies for setting up and solving proportions that shows little to no understanding of the concepts	Describes strategies for setting up and solving proportions that shows some understanding of the concepts	Describes strategies for setting up and solving proportions that show a good understanding of the concepts	Describes strategies for setting up and solving proportions that show a strong understanding of the concepts
Drawing Presentation	Lacks both organization and required information. Drawing very messy.	Lacks some organization but includes most of the required information. Drawing could be improved.	Organized drawing with all required information. Overall appearance is good.	Creative, neat, and organized drawing with all required information. Overall appearance is excellent.

Overall Level: _____

Remember:

- use your notebook/notes for help when completing this assignment
- this assignment is worth 20 points in the tests/assignments/projects category (that's equal to a test!)
- this assignment is DUE: Tues. June 3

